

CLAIMS

What is claimed is:

1. A system for performing wireless network planning using vector data, the system comprising: pixel data, vector data, and a coordinate reference for processing vector data comprising:

a bus;

5 a pixel data plane containing a pixel data point;

a vector data plane containing a vector data point;

a storage medium coupled to the bus for storing the pixel data plane, the coordinate data plane, and the vector data plane;

10 a digital processor communicating with the storage medium through the bus for executing machine readable instructions for processing the pixel data plane, the vector data plane and the coordinate data plane to determine propagation loss associated with a transmitter to receiver layout within the coordinate data plane;

an input for transferring data to the storage medium and the digital processor through the bus; and

15 an output for outputting the result of the processing of the pixel data plane, vector data plane, and coordinate data plane.

2. A method for simultaneously handling data planes for processing vector features in a wireless network planning system comprising:

accepting a vector data plane and a raster data plane;

- utilizing a coordinate system stored as a coordinate system data plane;
- 5 processing the vector data plane and the raster data plane using the coordinate system data plane to compute a distance to the vector feature that is within the boundaries of a pixel containing the vector feature; and
- transferring the result to an output.

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3. The method of claim 2, wherein the raster data plane includes at least one raster variable.
4. The method of claim 2, wherein the vector data plane includes at least one vector variable.
5. The method of claim 2, wherein the coordinate system data plane is comprised of a geographical coordinate system.
6. The method of claim 2, wherein the result is comprised of at least one data plane.

7. The method of claim 2, wherein the vector data plane and the raster data plane is accepted over a network.
8. The method of claim 2, wherein the output means is a network.
9. The method of claim 2, wherein the processing includes calculating a propagation loss for a wireless communications signal.
10. The method of claim 9, wherein calculating the propagation loss for a wireless communication signal comprises the steps of:
- determining a length of a radial from a base station to a mobile antenna;
 - computing the propagation loss from said base station to an inner edge of a map pixel containing said mobile antenna; and
 - determining a propagation loss from the inner edge of said map pixel containing said mobile antenna to a mobile antenna location using vector processing and a weighting function.
11. The method of claim 2, wherein the processing includes redistributing traffic within a sector onto vectors located within said sector.

12. The method of claim 11, wherein redistributing traffic within a sector comprises:
- calculating the total traffic within said sector;
 - determining a scaling factor;
 - using said scaling factor to spread said traffic over at least one vector point within
- 5 said sector; and
- spreading the remaining traffic over the pixels within the sector.
13. A computer-readable medium containing instructions for controlling at least one
- computer to perform a method for executing an event for processing vector data using a
- vector data plane, and a pixel data plane referenced using coordinate data, generated by a
- process written in a simulation language, by a component written in a target language, the
- 5 method comprising:
- generating an event by the process;
 - establishing a connection between the process and the component to transmit the
 - event;
 - translating the event to the target language; and
- 10 executing the translated event by the component to produce a result.